

Subject card

Subject name and code	Cytogenetics, PG_00203472						
Field of study	Medical Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group Specialty subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Ewa Piotrowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	15		2.0		33.0	50
Subject objectives	1. Familiarization with chromosome structure at various stages of the cell cycle 2. Introduction to clinical cytogenetics 3. Presentation of techniques used in cytogenetic studies 4. Presentation of karyotype notation system						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLMEDMU2_W02] is familiar with current issues in medical biology and related disciplines	Is aware of currently discussed issues regarding the conduct and interpretation of cytogenetic research results (BM2_W02)	[SW1] oral statement/conversation/discussion
	[BIOLMEDMU2_W01] has an in-depth knowledge of scientific fields and disciplines relevant to medical biology and the studied specialty and knows their main development trends	Has advanced knowledge in the field of cytogenetics (BM2_W01)	[SW4] test/exam - oral or written
	[BIOLMEDMU2_U01] is able to use, fluently yet critically, the academic literature and databases required for work in the field of medical biology and related disciplines, and to prepare and present academic papers in the field of medical biology and related sciences	Can proficiently, yet critically, use scientific literature as well as genetic and cytogenetic databases (BM2_U01);	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written
	[BIOLMEDMU2_W03] has an in-depth understanding of the structure and functions of the human body, the biological causes of disorders, pathological changes and social dysfunctions, and the methods used to assess them using modern and current biochemical, molecular, parasitological or neurobiological techniques	Knows the structure and functions of human genes and chromosomes, biological causes of their disorders, and methods for their assessment using cytogenetic techniques (BM2_W03)	[SW4] test/exam - oral or written
	[BIOLMEDMU2_K06] is ready to solve complex ethical problems related to the profession and to determine priorities for the implementation of specific tasks	Is ready to address complex ethical issues related to cytogenetic research (BM2_K06).	[SK1] oral statement/conversation/discussion
Subject contents	1. Structure of the human karyotype - characteristics of individual chromosomes 2. Chromosome staining techniques 3. System for recording cytogenetic research results 4. Cancer cytogenetics 5. Chromosomal syndromes and their common symptoms 6. Ethical aspects of cytogenetic research		
Prerequisites and co-requisites	Basics of genetics, Cell biology		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	100.0%
Recommended reading	Basic literature	Srebrniak, Tomaszewska: Badania cytogenetyczne w praktyce klinicznej. PZWL, 2008. Tobias, Connor, Ferguson-Smith (Red. Latos-Bieleńska Anna): GENETYKA MEDYCZNA. PZWL, 2014.	

	Supplementary literature	Drewa, Ferenc: GENETYKA MEDYCZNA. Urban & Partner, 2011 Juchniewicz P., Kloska A., Portalska K., Jakóbkiewicz-Banecka J., Węgrzyn G., Liss J., Głodek P., Tukaj S., Piotrowska E. X-chromosome inactivation patterns depend on age and tissue but not conception method in humans. Chromosome Res. 2023 Jan 25;31(1):4. doi: 10.1007/s10577-023-09717-9. PMID: 36695960.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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